

Amended Claims

1. (Currently amended) A method for mitigating defects caused by repairing inoperative pixels in a liquid crystal micro-display built on a silicon integrated circuit substrate, said substrate having an integral complimentary metal-oxide semiconductor (CMOS) control chip containing CMOS drive circuitry, comprising:

identifying defective CMOS drive circuitry for the inoperative pixel after fabrication of said CMOS control chip;

disconnecting the defective drive circuitry from the inoperative pixel; and

connecting the inoperative pixel to a working drive circuit of a nearby pixel using a bypass bit latch, such that when a bypass bit is set, the defective drive circuitry is bypassed and the inoperative pixel is driven from the working drive circuit of a nearby pixel, said nearby pixel comprising one of an adjacent pixel or a non-adjacent pixel.

2. (Cancelled).

3. (Cancelled)

4. (Currently amended) A method in accordance with claim 1 3, wherein the bypass bit is loaded from an external memory after the display is turned on.

5. (Currently amended) A method in accordance with claim 1 3, ~~wherein the step of providing additional circuitry further comprises:~~

multiplexing the drive circuits of each pixel with the drive circuit of a nearby pixel.

6. (Currently amended) A method in accordance with claim 1 3,

wherein the additional circuitry further comprising comprises:

providing a tri-state transistor associated with each pixel which is connected to the bypass bit latch; and

providing a resistor for coupling neighboring pixels; such that when the bypass bit is set, the transistor is switched to bypass the defective drive circuitry so that the inoperative pixel is driven from the working drive circuit of a nearby pixel through the resistor.

7-10 (Cancelled).

11. (Currently amended) A method in accordance with claim 1, wherein defects of the inoperative pixels are repaired mitigated in groups.

12. (Original) A method in accordance with claim 1, wherein identifying defective drive circuitry comprises the further step of providing test circuitry associated with the display.

13. (Original) A method in accordance with claim 1, wherein the pixel drive circuitry associated with each pixel is located separately from each pixel.

14. (Cancelled).

15. (Currently amended) A liquid crystal micro-display apparatus capable of repairing mitigating defects caused by inoperative pixels, comprising:

a plurality of pixels;

a complimentary metal-oxide semiconductor (CMOS) control chip integral to a silicon integrated circuit substrate of said micro display, said CMOS control chip containing CMOS drive circuitry for controlling the pixels;

means for disconnecting defective CMOS drive circuitry from an inoperative pixel after fabrication of said CMOS control chip; and

means a bypass bit latch for connecting the inoperative pixel to a working drive circuit of a nearby pixel, such that when a bypass bit is set, the defective drive circuitry is bypassed and the inoperative pixel is driven from the working drive circuit of a nearby pixel, said nearby pixel comprising one of an adjacent pixel or a non-adjacent pixel.

16. (Cancelled).

17. (Cancelled).

18. (Currently amended) Apparatus in accordance with claim 15 17, wherein the bypass bit is loaded from an external memory after the display is turned on.

19. (Currently amended) Apparatus in accordance with claim 15 17, ~~wherein the additional circuitry further comprising comprises:~~ multiplexing circuitry associated with the bypass bit latch.

20. (Currently amended) Apparatus in accordance with claim 15 17, ~~wherein the additional circuitry further comprising comprises:~~ a tri-state transistor associated with each pixel connected to the bypass bit latch; and a resistor coupling neighboring pixels; such that when the bypass bit is set, the transistor is switched to bypass the defective drive circuitry so that the inoperative pixel is driven from the working drive circuit of a nearby pixel through the resistor.

21-24 (Cancelled).

25. (Currently amended) Apparatus in accordance with claim 15, wherein defects of the inoperative pixels are repaired mitigated in groups.

26. (Original) Apparatus in accordance with claim 15, further comprising test circuitry to identify the defective drive circuitry.

27. (Original) Apparatus in accordance with claim 15, wherein the pixel drive circuitry associated with each pixel is located separately from each pixel.

28. (Cancelled).

29. (Previously presented) A method in accordance with claim 1, wherein said defective CMOS drive circuitry is identified after the CMOS control chip and the liquid crystal material are assembled together.

30. (Previously presented) A method in accordance with claim 29, wherein said inoperative pixel is identified via an optical inspection of the display after assembly of said display.

31. (Previously presented) Apparatus in accordance with claim 15, wherein said defective CMOS drive circuitry is identified after the CMOS control chip and the liquid crystal material are assembled together.

32. (Previously presented) Apparatus in accordance with claim 31, wherein said inoperative pixel is identified via an optical inspection of the display after assembly of said display.